

What is claimed is:

1. An electrically controlled braking system comprising:
 - at least one control unit, said at least one control unit generating control signals;
 - a first brake component responsive to the control signals generated by said at least one control unit;
 - a second brake component responsive to the control signals generated by said at least one control unit;
 - a first control network electrically connecting said at least one control unit and said first brake component, said first control network adapted to transmit the control signals from said at least one control unit to said first brake component;
 - a second control network electrically connecting said at least one control unit and said second brake component, said second control network adapted to transmit the control signals from said at least one control unit to said second brake component; and
 - an auxiliary control link activatable to electrically connect said first brake component and said second brake component when a failure occurs in one of said first control network or said second control network, said auxiliary control link adapted to transmit the control signals between said first brake component and said second brake component when the failure occurs.

2. The braking system of Claim 1 wherein said at least one control unit comprises two control units, wherein one of said two control units is electrically connected to said first control network, and wherein another of said two control units is electrically connected to said second control network.

3. The braking system of Claim 1 wherein said at least one control unit comprises a single control unit, and wherein the single control unit is electrically connected to both said first control network and said second control network.

4. The braking system of Claim 1 wherein said at least one control unit comprises two control units, and wherein each of the two control units is electrically connected to both said first control network and said second control network.

5. The braking system of Claim 1 further comprising:

a third brake component responsive to the control signals generated by said at least one control unit, said third brake component electrically connected to said first control network;

a fourth brake component responsive to the control signals generated by said at least one control unit, said fourth brake component electrically connected to said second control network; and

a second auxiliary control link activatable to electrically connect said third brake component and said fourth brake component when a failure occurs in one of said first control network or said second control network, said second auxiliary

control link adapted to transmit the control signals between said third brake component and said fourth brake component when the failure occurs.

6. The braking system of Claim 5 further comprising:

a fifth brake component responsive to the control signals generated by said at least one control unit, said fifth brake component electrically connected to said first control network;

a sixth brake component responsive to the control signals generated by said at least one control unit, said sixth brake component electrically connected to said second control network; and

a third auxiliary control link activatable to electrically connect said fifth brake component and said sixth brake component when a failure occurs in one of said first control network or said second control network, said third auxiliary control link adapted to transmit the control signals between said fifth brake component and said sixth brake component when the failure occurs.

7. The braking system of Claim 1 wherein each of said first brake component and said second brake component comprises a brake actuator comprising an electrical control unit.

8. The braking system of Claim 1 wherein said first brake component and said second brake component are actuated by a force selected from the group

consisting of an electrical force, a hydraulic force, a pneumatic force and combinations of these.

9. The braking system of Claim 1 wherein said first brake component and said second brake component are disposed on a common axle of a vehicle.

10. The braking system of Claim 1 wherein said at least one control unit further controls functions a vehicle system selected from the group consisting of an antilock brake system, an electronic braking force distribution system, a vehicle suspension system, a dynamic stability system and combinations of these.

11. The braking system of Claim 1 wherein control signals to which both said first brake component and said second brake component are responsive are transmitted over both said first control network and said second control network.

12. An electrically controlled braking system comprising:

at least one control unit, said at least one control unit generating control signals;

a plurality of pairs of brake components, each of said brake components responsive to the control signals generated by said at least one control unit;

a first control network electrically connecting said at least one control unit and a first brake component of each pair of brake components, said first control network

adapted to transmit the control signals from said at least one control unit to the first brake component of each pair of brake components;

a second control network electrically connecting said at least one control unit and a second brake component of each pair of brake components, said second control network adapted to transmit the control signals from said at least one control unit to the second brake component of each pair of brake components; and

a plurality of auxiliary control links activatable to electrically connect the first brake component of each pair of brake components and the second brake component of each pair of brake components when a failure occurs in one of said first control network or said second control network, said auxiliary control links adapted to transmit the control signals between the first brake component of each pair of brake components and the second brake component of each pair of brake components when the failure occurs.

13. The braking system of Claim 12 wherein said at least one control unit comprises two control units, wherein one of said two control units is electrically connected to said first control network, and wherein another of said two control units is electrically connected to said second control network.

14. The braking system of Claim 12 wherein said at least one control unit comprises a single control unit, and wherein the single control unit is electrically connected to both said first control network and said second control network.

15. The braking system of Claim 12 wherein said at least one control unit comprises two control units, and wherein each of the two control units is electrically connected to both said first control network and said second control network.
16. The braking system of Claim 12 wherein each of the brake components comprises a brake actuator comprising an electrical control unit.
17. The braking system of Claim 12 wherein each of said brake components is actuated by a force selected from the group consisting of an electrical force, a hydraulic force, a pneumatic force and combinations of these.
18. The braking system of Claim 12 wherein each pair of brake components is disposed on a common axle of a vehicle.
19. The braking system of Claim 12 wherein said at least one control unit further controls functions a vehicle system selected from the group consisting of an antilock brake system, an electronic braking force distribution system, a vehicle suspension system, a dynamic stability system and combinations of these.
20. The braking system of Claim 12 wherein control signals to which each of said brake components is responsive are transmitted over both said first control network and said second control network.